Cascadia Subduction Zone

American Planning Association
Washington Chapter
Peninsula Section
Bainbridge Island
15JAN15
The Ring of Fire accounts for 90% of all earthquakes, and 81% of the world’s largest earthquakes.

Subduction zones are shown in red.

The CSZ fault line is part of the Ring of Fire.

The CSZ is the only significant fault line on the Ring of Fire without a major quake in the last 50 years (see blue stars).
The Cascadia Subduction Zone (CSZ) runs 800 miles from Southern British Columbia to Northern California, and lies 50 to 80 miles off the Pacific Coast. The heavy Juan de Fuca plate is sliding under the lighter North American plate. A magnitude 9.0 CSZ earthquake has occurred every 350 to 500 years (USGS – 400-600 years). The last CSZ earthquake occurred in the year 1700 (January 26).
Ground Shaking Effects

**Mercalli Index:** Ground shaking will depend on the actual fault rupture method and can not be accurately forecast. It is anticipated that the fault will rupture along its entire 800 mile length resulting in a magnitude 9.0 earthquake that will last 4-10 minutes. The intensity of the shaking will decrease with distance from the fault. Even so, Seattle is expected to experience a 7.0 magnitude or higher earthquake with 5 minutes of shaking.

**Liquefaction:** The cause of some of the most dramatic damage resulting from an earthquake, liquefaction areas can be accurately forecast based on soil types and water content. Some of the most susceptible areas are areas that have a high commercial potentiality, i.e. ports, bridges, commercial areas.

**Landslides:** Landslides will occur up to hundreds of miles from the fault due to the intensity of the shaking. Landslide potential significantly increases with water content. If the CSZ rupture occurs during the rainy season, landslides will be most prolific. Fortunately most of the landslides will occur in sparsely populated areas due to the existence of unoccupied terrain in the mountainous regions.

**Tsunami Inundation:** Tsunamis are historically the biggest killer associated with earthquakes. The residents most affected are along Pacific Coastal areas. The numbers in jeopardy will increase sharply in summer months. Current estimates place as many as 50,000 residents in the hazard zone in February.
FEMA Effort & Modeling

• FEMA commissioned a multi year *HITRAC scientific study and produced the Federal Response Plan (Published December 2013)

• Modeling Factors
  • February 6, 9:41am PST, weekday
  • Complete rupture of the CSZ fault line
  • Epicenter 60 miles off Oregon coast, 120 miles West of Eugene
  • M9.0 earthquake, with ground shaking up to 5 minutes
  • Tsunami wave heights 12 to 40 feet at landfall
  • Aftershocks of M7.0 or greater
  • Additional tsunamis caused by aftershocks

Note: Damage caused by aftershocks, follow on tsunamis, and secondary effects is not included in damage estimates

*HITRAC – Homeland Infrastructure Threat and Risk Analysis Center, the Department of Homeland Security (DHS) Infrastructure-intelligence fusion center.
These are general locations and forecast status of the known Hospitals.

There are 112 Hospitals in the affected area.

36% suffer severe damage, are unusable, and will likely be completely offline.

17% suffer moderate damage and are only assumed capable of 50% normal capacity.

Total reduction is assumed to be 45% of total hospital capacity.

47% suffer slight damage and are able to continue to operate at capacity.

The facilities nearer to the epicenter suffer most significant damage resulting in virtually no Hospital capacity west of the I5 corridor.

These numbers discuss STRUCTURAL capacity, not patient capacity, which is further reduced due to lack of electricity, potable water, sanitation, etc.
Fire Stations

These are general locations and forecast status of the known Fire Stations.

There are 971 Fire Stations in the affected area.

30% suffer severe damage, are unusable, and are planned to be completely offline.

6% suffer moderate damage and are only assumed capable of 50% normal capacity.

**Total reduction is assumed to be 33% of Fire Response capability.**

64% suffer slight or no damage and are able to continue to operate at capacity.

The facilities nearer to the epicenter suffer most significant damage resulting in **significantly reduced capability west of Shelton.**
These are general locations and forecast status of the known Police Stations.

There are 178 Police Stations in the affected area.

41% are completely destroyed, 7% suffer severe damage, are unusable, and are planned to be completely offline.

5% suffer moderate damage and are only assumed capable of 50% normal capacity.

**Total reduction is assumed to be 51% of Police Response capability.**

48% suffer slight or no damage and are able to continue to operate at capacity.

The facilities nearer to the epicenter suffer most significant damage resulting in significant degradation of Law Enforcement capability west of Shelton.
Senior Living Facilities

There are approximately 2,156 senior living facilities in the affected area.

Nearly 100% of facilities West of the I-5 corridor suffer complete damage, and are likely unusable.

The vast majority of facilities along the I-5 corridor suffer complete to severe damage and are likely unusable, or are significantly degraded.

The facilities nearest the epicenter suffer most significant damage resulting in virtually no senior living facility capacity West of the I-5 corridor.
There are approximately 2,286 schools in the affected area.

Nearly 100% of schools West of the I-5 corridor suffer complete or severe damage, and are likely unusable.

Schools along the I-5 corridor suffer a wide range of damage from complete to slight.

Schools nearest the epicenter generally suffer the most significant damage resulting in limited capacity West of the I-5 corridor.

Notable data: All of these schools are part of the National Sheltering System. Their loss indicates a corresponding reduction in sheltering capacity.
Most facilities west of the I-5 corridor suffer complete to severe damage.

Most facilities along the I-5 corridor suffer severe to moderate damage.

Most facilities east of the I-5 corridor suffer slight to no damage.

Many of these facilities are located in liquefaction zones.
There is a vast network of County, State, and Federally maintained highways in the affected area. Ground transportation is the primary method of movement for most commodities.

The highway system will suffer the most damage in the vicinity of the coast with both earthquake and tsunami damage. This will significantly impact any lifesaving or recovery operations, and will drive route clearance and roadway repair to a very high priority across the region.

In the initial stages of the CSZ response the only method of reaching coastal communities will be by air. There are no surviving ground routes to the coastal region.
Transportation- Hwy Bridges

Virtually every highway crosses numerous bridges. Route identification that does not cross a bridge will not be possible when attempting to reach any isolated community. Bridges in the affected area are predominantly old and were built prior to establishment of significant seismic building requirements.

The assessment of bridges as early in the IAA process as possible will be key to the development of routes into isolated communities. Identifying bridges that need the least repairs will speed up recovery operations.

The lack of suitable bridges will be a factor in the determination of the recovery efforts and timelines.
This slide provides an overview of the utilities networks across the affected area. In general the amount of damage decreases from West to East. Major networks will be out-of-service until significant repairs can be made.

- There are approximately 440 major electrical facilities and a vast network of electrical power lines, both above and underground throughout the region.
- There are 68 major Natural Gas facilities and 12 counties contain 22 major sections of NG pipe network.
- There are 54 petroleum processing facilities, and 9 counties contain 16 major sections of petroleum pipeline.
- There are 35 known Potable Water Facilities.
Petroleum and Gas pipelines suffer breaks in numerous locations within the affected areas.

Very few Petroleum or Natural Gas facilities survive with any significant structural capacity. This does not account for ‘real’ capability. No electricity, no water, degraded transportation infrastructure all compound the fuel production/distribution equation.

Remaining structural capacity
NG Facilities – 18%
Petroleum Facilities – 10%
# Planning Factors (FEMA)

<table>
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<th>Washington Total</th>
<th>Notes</th>
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<td>Land Area (Sq. Miles)</td>
<td>71,303</td>
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<tr>
<td>Miles of Pacific Coastline</td>
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<tr>
<td>Population</td>
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<td>Population exposed to tsunami</td>
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<td>Residential buildings damaged (Slight to complete damage)</td>
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<td>Short term human sheltering requirements</td>
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<td>65,249</td>
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<td>Building debris (Cubic Yards)</td>
<td>13,174,243</td>
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Approved Mission Statement & TAG’s Intent
Mission Statement

• On order (O/O), in response to a Cascadia Subduction Zone event, the Washington National Guard assembles, mobilizes, deploys, establishes a Dual Status Command, sustains and demobilizes forces in support of civil authorities to protect life, property and the environment within the State of Washington.
TAG’s Intent

- **Intent:**

  - In order to save lives and protect property, the Washington National Guard will establish Joint Task Force Washington, utilize a Dual Status Command and subordinate Task Forces to provide military capabilities to civilian authorities in coordination with our State Emergency Management Division and the Comprehensive Emergency Management Plan. I anticipate that we will operate in three Areas of Operation – the coast/Olympic Peninsula, Puget Sound/I-5 Corridor, and Central/Eastern Washington. I expect the environment to be one of limited mobility and isolated populations. All elements of the Washington National Guard will mobilize as quickly as possible to respond to the many needs of our citizens. We will provide the most effective assistance possible across all phases of response. We will safely build our force structure and execute missions in support of the Governor of the State of Washington. We will partner with and provide liaison to City, County, State, Tribal and Federal agencies to support the local Incident Commander’s (IC) throughout the affected region. We will coordinate the DOD response IOT better resource those ICs. We will support the operations of the State Emergency Operations Center. Upon completion of our mission and the transition to recovery operations, we will rapidly and efficiently demobilize our Soldiers/Airmen and their equipment while ensuring we are prepared for the next emergency.
TAG’s Intent

Key Tasks:

• First priority to all of our Soldiers and Airmen is to stabilize their families. Preparation is the key element IOT allow our Soldiers and Airmen to survive the CSZ and be available to provide response. (PH1)
• Mobilize available Guardsmen to build capabilities, gain accountability of available personnel and equipment. (PH2A)
• Re-establish Command and Control of our Forces and be prepared to receive DOD forces in the response. This will include re-establishment of our Joint Operations Center, establishment of a Dual Status Command, and standing up the Geographic Task Forces (GTF). (PH2A)
• Exercise COOP and establish the alternate State EOC/JOC under command and control of JTF East if required. (PH2A)
• Establish communications with the State EOC and necessary County, State, Tribal and Federal entities IOT coordinate employment of the assets available. Be prepared to provide trained personnel to man the State EOC and provide additional liaisons to local EOCs as required. (PH2A)
• Employ assets in support of the Governor’s intent IOT save lives, prevent suffering, prevent further damage to the infrastructure, environment and economy of the State of Washington. (PH2A)
• Conduct aerial search and rescue along the coast and the isolated Olympic Peninsula as soon as possible in order to save lives. (PH2A)
• Exercise JRSOI of a very large number of military forces flowing into the state to provide response operations. (PH2B)
• Conduct ground based humanitarian assistance missions along the I-5 corridor as soon as mobility corridors have been established. (PH2B)
• Account for the use of our assets. Maintain running estimates of costs incurred and be prepared to justify those costs. (PH2C)
• Upon release from Incident Commander’s and confirmation of no further requirement, demobilize our forces and their equipment. Conduct required maintenance and services, prepare the equipment for the next emergency. (PH3)
TAG’s Intent

• Endstate:
  – The Washington National Guard has successfully responded to the CSZ event by providing immediate lifesaving efforts for the residents of the State of Washington, by working with local incident commands to prevent further damage to infrastructure, the environment and the economy of the State of Washington, by coordinating actions with all of the State and Federal agencies required, and by coordinating the DOD response. We have successfully and safely mobilized, sustained and demobilized our forces in support of the intent of the Governor, and are now postured to respond to future events or assist in long-term recovery as ordered.
Operational Concepts

Center of Gravity update

Phasing Update

Command and Control
FEMA Phases

Phase 1 (Prepare)
- Uncoordinated, chaotic
- Immediate Goal is survival
- Secondary Goal is to save lives, initiate the response

Phase 2a (Initial Response)
- Transition to organized chaos
- Immediate Goal is to save lives
- Secondary goal is to coordinate and increase the response

Phase 2b (Employment Response)
- Begin to improve conditions
- Immediate goal is to "provide sustainment"
- Secondary Goal is to "recover capability"

Phase 2c (Transition to Recovery)
- Initiate long term repairs
- Immediate goal is to "recover capability"

Phase 3 (Long Term Recovery)
- Per UCG (May be a year or more)

Lines of Effort

FEMA/UCG
- Lifesaving Begins
- WA-UCG Established
- Lifesaving Effort Complete
- Longterm Recovery Ops

Nat’l Guard
- Immediate Response / Build Combat Power
- Conduct Deliberate Response Operations
- Demobilize

IRA (T10)
- T32 mobilization Rescinded

SAD / T32 Mobilization
- SAD / T32 EMAC Forces Available

T10 Mobilized Forces Available
Although legally identified as the “usual and customary command and control arrangement” (NDAA FY12) the appointment of a Dual Status Commander (DSC) requires a request from TAG, through GOV-WA, and NorthCom, to SECDEF for approval. This request process can be made initially verbally, and may be pre-coordinated to some extent.
A UCS may (will) be established locally to provide a central point for Federal, State, Tribal, and local executives to coordinate their support to the incident. The Unified Coordination Group leads the UCS. The Unified Coordination Group typically consists of the FCO, SCO, and senior officials from other entities with primary statutory or jurisdictional responsibility and significant operational responsibility for an aspect of an incident. This group meets to develop a common set of objectives and a coordinated initial UCS action plan. **The UCS is often referred to as the “JFO”. Technically, the JFO is the building in which the UCS operates.**
Timeline (2 A)

Phase 1
(Prepare)

WA NG LOE
- Immediate Response / Build Response Power

WA EMD
- Execute COOP/ Phase III Activation / Establish Comms / Gain SA (IAA) / Coordinate Response

WA JOC
- Execute COOP (Devolve) / Augment EMD

TF East
- Execute JOC-COOP (Receive Devolution) / Establish Comms / Effect recall / Launch TF RSOI / Gain SA (IAA) / Receive DSC / Coordinate response

West TFs
- Self Mobilize / Occupy armories / Establish comms / Secure AA&E / Conduct Immediate Response

T10 IRA
- Self Mobilize / Establish comms / Secure AA&E / Conduct Immediate Response IAW predetermined priorities

Phase 2a
(Initial Response)

H - Hour
Lifesaving Begins

H + 24
FEMA Phases

H + 48
WA-UCG Established

H + 72
WA-DSC Established

Mobilized forces begin to arrive

Phase 2b
(Employment Response)
Tiered Base Concept

**FEMA Basing Terms:**

**ISB – Incident Support Base** – First level of logistical distribution. Provides distribution to FSAs. All handled commodities belong to FEMA until assigned to an FSA. One ISB is tentatively allocated to Wash State in CSZ.

**FSA – Forward Staging Area** – Second level of distribution, provides distribution to State Staging Areas. Doctrine is changing to create three sub-types of FSA (Type, 1, 2, 3, based on capacity). Two FEMA FSAs are tentatively allocated to Wash State in the CSZ.

**RBC – Responder Base Camp** – Third level of FEMA basing. This is where out-of-state responders are based upon arrival. These are the State’s responsibility to manage.

**CPOD – Community Point of Distribution** - This is the final step in the logistical distribution. It is the responsibility of the local EM / IC to coordinate.

**Tier 1**

Based on existing airports
- Largest capability (747/C5)
- Identified now
- Preplan usage now
- Pre-coordinate design now
- Acts as all Tiers
- Provides distribution to local communities

**Tier 2**

Based on existing airports
- 2nd largest capability (C17/C130)
- Identified now
- Preplan usage
- Pre-coordinate design
- Serves as log base and RBC
- Provides distribution to local communities

**Tier 3**

Based on existing airports
- 3rd largest capability (<C130)
- Identified now
- Preplan usage
- Pre-coordinate design
- Serves as log base and RBC
- Provides distribution to local communities

**Tier 4**

Rotary Wing / Vertical Lift
- Same capabilities, less capacity
- Location selected ICW local EM
- Template now, confirm later

**Tier 5**

- Final Point of Distribution
- Identified by Local EM
- Established daily
# Tiered Base Concept

**Tier 1 (BSI/ISB/SSA)**
- JRSOI/RIP
- Equipment staging & bed down
- Resource transfer (H2O, CL I-IX)
- Refuel (Ground & Rotary Wing)
- Medical triage / treatment / transfer (Level III)
- Limited human & pet sheltering
- Responder sustainment
- Distribution LOD for local area
- 747/C5 capable
- Possible Railhead / Trucking depot

**Tier 2 (BSI/FSA/SSA)**
- JRSOI/RIP
- Equipment staging & bed down
- Resource transfer (H2O, CL I-IX)
- Refuel (Ground & Rotary Wing)
- Medical triage / treatment / transfer (Level II)
- Limited human & pet sheltering
- Distribution LOD for local area
- Responder sustainment
- C17 / C130 capable
- Possible railhead / truck depot

**Tier 3 (FSA/SSA)**
- JRSOI/RIP (Limited)
- Equipment staging & bed down
- Resource transfer (H2O, CL I-IX)
- Refuel (Ground & Rotary Wing)
- Medical triage / treatment / transfer (Level II)
- Limited human & pet sheltering
- Distribution LOD for local area
- Responder sustainment
- Less than C130 capable (C23)
- NOT rail or truck capable (Isolated)

**Tier 4 (SSA/RBC)**
- Equipment staging & bed down
- Resource transfer (H2O, CL I-IX)
- Refuel (Ground & Rotary Wing)
- Medical triage / treatment / transfer (Level I)
- Limited human & pet sheltering
- Distribution LOD for local area
- Responder sustainment
- Rotary Wing / vertical lift capable

**Tier 5 (CPOD)**
- Community Points of Distribution
- Medical CCPs (Basic First Aid)
- Hasty Collection Points (SAR)
Timeline (Phase 2B)

**Phase 2A (Initial Response)**
- WA NG LOE
  - WA-UCG Established
- WA EMD
- JTF-WA
- TF East
- West TFs
- T10 IRA
- T10/T32
- Curtail IRA operations

**Phase 2B (Employment Response)**
- WA-DSC Established / Receive Forces / Establish Tiered Bases / Establish TFs / Conduct response operations
- Coordinate Response / Establish UCS-UCG / Process RFAs
- Recover from devolution / Establish C2 at CPM / Gain SA-SU / Coordinate Response
- Transfer Authority to JTF-WA/Receive T32/T10 forces at Tiered bases/Conduct RIP with TF RSOI/ Receive TF East assets/Provide response with TF East
- Build strength / Build TF HQs / Occupy Tiered bases based on capability and need as determined by DSC
- Conduct RSOI / Plug into DSC structure / Establish Tiered bases / Build functional strength / support EMs & ICs

**FEMA Phases**
- WA-UCG Established

**Phase 2C (Transition to Recovery)**
- Life Saving Efforts Complete

**Per UCG**
**Timeline (Phase 2 C)**

**Phase 2B** (Employment)
- **Per UCG**
  - **T10 IRA**
  - **WA NG LOE**
  - **T10/T32**
  - **WA EMD**
  - **JTF-WA**
  - **TF East**
  - **West TFs**

**Phase 2C** (Transition to Recovery)
- **Per UCG**
  - **T10 IRA**
  - **WA NG LOE**
  - **WA EMD**
  - **JTF-WA**
  - **TF East**
  - **West TFs**
  - **T10/T32**

**FEMA Phases**
- **Phase 2B** (Employment)
  - Curtail IRA operations
- **Phase 2C** (Transition to Recovery)
  - Receive TF East assets / Provide response In HLS East
  - Receive assets / Provide response In assigned HLS Region
  - Coordinate Response / Process RFAs
  - Establish C2 at CPM / Gain SA-SU / Coordinate Response
- **Phase 3** (Long Term Recovery)
  - Conduct RSOI / Plug into DSC structure / Establish Tiered bases / Build functional strength / support EMs & ICs
  - Receive Forces / Establish Tiered Bases / Establish TFs / Conduct response operations

**Life Saving Efforts Complete**
## Tiered Base Locations

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<tr>
<th>Tier</th>
<th>Airport Code</th>
<th>City</th>
<th>County</th>
<th>Region</th>
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<td>KVUO</td>
<td>Vancouver</td>
<td>Clark</td>
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Basing Concept

Tier 1 (C5, 747-400, IFR capable)
Tier 2 (C17, C130, IFR capable)
Tier 3 (< C130 (C23) capable, IFR)
Tier 3 (< C130 (C23) capable, VFR)
Rotary Wing Base
Rapid Assessment / Early Opening

4 Person RSOL Team
- Prepares area for asset arrival
- Contacts Airport Manager
- Contacts Emergency Manager
- Enables immediate assessment
- Directs DOD Flow
- Prioritizes initial ENG effort

Each Tier 1-3 Airport is assessed and opened as early as possible
Establish Tier 1 Bases
Establish Tier 2 Bases:
Tier 1 (or assets from elsewhere across the nation) resources push forward into affected area and establish Tier 2s. This action occurs nearly simultaneous to establishment of Tier 1s to quickly establish a support network in the affected area.
Establish Tier 3 and 4 Bases

Establish Tier 1-4 Logistic Support Bases:
Initiate distribution networks from tiered bases.
Ground distribution networks service accessible areas. Rotary wing expand the network to areas that are isolated or non-reachable by ground.

USN/USMC assets integrate in coastal areas when available, and are coordinated through the JFO/UCG and DCO.
The icons below are not necessarily Service Component specific. In some cases these resources are only available in one Service Component. A typical configuration was used to perform calculations. In most cases Army organizational structure was used as the default.
DOD Task Force Composition

**Region 1**
- DOD Forces
- Region 1: 5,637
- Region 2: 2,881
- Region 3: 6,891
- Region 4: 3,610
- Region 5: 5,059
- Total: 40,075

**Region 2**
- DOD Forces
- Region 6: 6,260
- East: 2,896
- TF Aviation: 2,689
- TF CBRNE: 4,152
- Total: 40,075

**Region 3**
- DOD Forces
- Region 1: 5,637
- Region 2: 2,881
- Region 3: 6,891
- Region 4: 3,610
- Region 5: 5,059
- Total: 40,075

**Region 4**
- DOD Forces
- East: 2,896
- TF Aviation: 2,689
- TF CBRNE: 4,152
- Total: 40,075

**Region 5**
- DOD Forces
- East: 2,896
- TF Aviation: 2,689
- TF CBRNE: 4,152
- Total: 40,075

**Region 6**
- DOD Forces
- Eastern WA 1,487,147
- 1,031,352
- 482,135 795,225 1,487,147

**As Of:** 03OCT14
2 Combat Aviation Brigades (or CAB equivalents) with Armed Reconnaissance Battalions (ARB) removed and replaced by General Support Aviation Battalions (GSAB).

TF AVIATION

T1: Establish C2 vic. GAAF/JBLM.
P1: Coordinate DOD Aviation response.

T2: Conduct JRSOI of aviation forces.
P2: Provide rapid, coordinated employment of aviation capability.

T3: Provide Airborne SAR in Coastal AOR.
P3: Provide immediate response and life saving activities for most impacted region.

T4: Provide General Support Aviation capability to Washington State.
P4: Enable aerial movement of logistics and personnel in support of relief operations.

T5: Establish Aviation Maintenance and refuel capability at multiple locations within Washington State.
P5.1: Maintain availability of aviation assets.
P5.2: Provide refuel capability to the response (Air & Ground).

T6: Establish Air Traffic Control and Instrument Approach capability at specified airports.
P6: Enable aviation operations in congested and instrument conditions.

327 Aircraft

3419 Personnel

1x Theater Aviation Command Headquarters
2x Combat Aviation Brigade Headquarters
1x Battalion Task Force Headquarters
7x General Support Battalions
4x Assault Battalions
1x Security and Support Battalion
2x Airfield Operations Battalions
**TF CBRNE**

**T1:** Provide Hazardous Site reconnaissance and classification (CST).

**P1:** Identify response scope and priority.

**T2:** Provide capabilities to conduct patient decontamination, medical triage and stabilization, and casualty search and extraction. (CERFP)

**P2:** Assist first responders with CBRN consequence management.

**T3:** Provide CBRN consequence management C2 and security (CASE) for multiple CERFP’s and CST’s. Until DSCA T-10 asset response. (HRF C2)

**P3:** Assist first responders with DSCA CBRN response management.

**T4:** Provide Fatality Search and Recovery

**P4:** Assist first responders in extraction, processing and storage of fatalities.

Priority of Fatality Search and Recovery Team (FSRT) emplacement goes to Region 3, Region 1, Region 2, then Region 6.

**Totals:**

1x HRF C2 MRP

3x “Super” Homeland Response Forces

12x CERFP/CBRN TFs

15x Civil Support Teams
Military units retain command and control over military units. Commanders at all levels provide support to local civilian authority via established supporting relationships.
Establish Geographic Task Forces

Decisive Operation
HLS Region 4

- Cathlamet: Tier 4
- Castle Rock: Tier 4
- Longview: Tier 4 Tier 3, IFR
- Kelso: Tier 4
- Clark County Fairgrounds: Tier 4
- Woodland: Tier 4
- Clark Valley: Tier 4
- Battle Ground: Tier 4
- Washougal: Tier 4
- Stevenson: Tier 4
- Woodland: Tier 3, VFR
- Vancouver: Tier 3, VFR
- DMAT

DOD Units Not Yet Placed

Federal ESF Assets Not Yet Placed
HLS Region 5

- Vaughn Tier 4
- McChord AFB Tier 3, IFR
- Puyallup Tier 4
- Cheney Stadium EOC
- DMAT
- Gray Army AF Tier 1
- Tacoma Narrows Tier 4
- Vassault Tier 4
- Tacoma Narrows Tier 3, VFR
- McChord AFB Tier 1
- Pure E
- SEC
- ASMC
- DASF
- CSH
- DASF
- Federal ESF

Units Not Yet Placed:
- X
- US&R
- CA

Assets Not Yet Placed:
- U
- SEC
- SEC
- SEC
Increase Capability at all Tiered Bases

Shaping and Sustaining Operations
This is a generalized timeline to show phasing of assets in priority.
Immediate Response - Ground

Following a CSZ rupture, Title 10 Forces conduct immediate Search & Rescue operations from the following installations:

- Naval Station Everett
- Naval Base Kitsap – Bangor
- Naval Base Kitsap - Bremerton
- Naval Air Station Whidbey
- USCG Port Angeles
- Manchester Fuel Depot
- JBLM

Meanwhile, Pararescue Jumpers arrive to coordinate wide area search efforts along side local Emergency Managers.

Tactical Air Control Party (TACP) personnel begin to establish helipads to enable deliberate SAR efforts.

Under Immediate Response Authority, Search & Rescue operations emanate from T10 installations into local communities in order to conduct immediate life saving operations and to gather IAA.

As the response becomes organized over time, T10 forces transition to deliberate Search & Rescue via ground and air.
Immediate Response - Air

Hasty SAR (0-24 hours)
Available rotary wing assets self deploy and provide Hasty SAR under Immediate Response Authority. Contact is made with local (County, City, Tribal) Emergency Managers and priorities of local SAR are established.

- Rescued individuals are transported to hasty Survivor Collection Points (SCPs)
- Survivors requiring medical treatment are positively handed off to medical personnel at hasty medical facilities

Jurisdictional Assignments*
Region 1: Navy & SnoCo Sheriff’s Dept.
Region 2: Coast Guard
Region 3: Army
Region 4: Army
Region 5: Army
Region 6: King County Sheriffs Office

*All Military aircraft are intended to augment civil capabilities

National level assets launch immediately, but may not arrive for several days.

US Army aircraft provide response to all HLS Regions as capability increases.

PJ and TACP Employment
Tactical Air Control Party (TACP) members deploy to select locations on the coast to coordinate Hasty Survival Collection Points and to establish HLZs. Pararescue Jumpers (PJ) engage local Emergency Managers to coordinate Wide Area Search operations. Together, PJs and TACPs establish the initial aerial Search and Rescue capability along the coast.
C3 – Command, Control, & Communications

Military Task Force Headquarters
A military Task Force Headquarters is assigned to each Homeland Security Region (1x HQ to East of the Cascades, Regions 7-9) to provide Command and Control of military assets, and to provide priority allocation of resources to ICs within that HLS Region. There will be 7x Brigade level headquarters.

Joint Incident Site Communications Capability
Initial distribution is to each County EOC and to each TF Command Post, including the DSC. Total request is for 40 JISCC, to provide 9 spares to be placed as mission requires (31 employed and 9 spare).

<table>
<thead>
<tr>
<th>JISCC Emplacement Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Wave Priorities</strong></td>
</tr>
<tr>
<td>Dual Status Command</td>
</tr>
<tr>
<td>TF Aviation</td>
</tr>
<tr>
<td>TF HQ Region 3</td>
</tr>
<tr>
<td>TF HQ Region 2</td>
</tr>
<tr>
<td>TF HQ Region 4</td>
</tr>
</tbody>
</table>
Deliberate SAR - Ground

1-US&R Team: ~71 PAX total footprint (-OIC, ~6 logistics personnel)
- Capable of dividing into two ~31 PAX teams
- NOTE: below reflects support package for 1 full ~71 PAX team

Tier 1
Tier 2
Tier 3 (IFR)
Tier 3 (VFR)

Rolling Stock:
- 4
  - DS to OIC & rapid response element with personal gear immediate access
- 4
  - Immediate access gear transport & limited PAX movement
- 2
  - Bulk/ paleditized gear movement
- 5
  - US&R PAX movement

Aerial Support:
- 2
- 2

In the event that the ground mobility corridors are impassable and Rotary Wing is required to insert and support the US&R Team

Ch47s & UH60s to insert, resupply, and extract the US&R team with gear by multiple turns. Bulk/ paleditized gear will be re-configured to be compatible with aerial platforms (requiring additional time)

### USAR Team Placement by Phase / Priority

<table>
<thead>
<tr>
<th>1st Wave Priorities</th>
<th>2nd Wave Priorities</th>
<th>3rd Wave Priorities</th>
<th>4th Wave Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 3</td>
<td>Region 2</td>
<td>Region 5 (2)</td>
<td>Region 2 (2)</td>
</tr>
<tr>
<td>Region 6</td>
<td>Region 1</td>
<td>Region 4 (2)</td>
<td>Region 6 (4)</td>
</tr>
<tr>
<td>Region 5</td>
<td>Region 3 (2)</td>
<td>Region 1 (2)</td>
<td>Region 5 (3)</td>
</tr>
<tr>
<td>Region 4</td>
<td>Region 6 (2)</td>
<td>Region 6 (3)</td>
<td>Region 1 (3)</td>
</tr>
</tbody>
</table>
Deliberate SAR – Air

While TF Aviation is being established, Regional TF Staff (including Air Ops Branch Director’s (AOBD’s)) are deployed to each TF Region. Upon arrival, AOBDs work with Local Emergency Managers in support of regional Search & Rescue efforts and process requests for aviation assets.

As the theater matures SAR/MEDEVAC aircraft are placed General Support (GS) to each region and are available via an Emergency Radio Net (i.e. Sheriff’s Net)
Mission
Establish Level I, II, and III aid stations throughout the State in order to provide emergent life saving services for any injured persons and to evacuate to higher echelons of care.

Treatment
Triage, treat, return to duty, or coordinate evacuation of injured survivors through necessary echelons of care.

Evacuation
Air evacuation is preferred but ground evacuation will be utilized where feasible. Level I facilities will evacuate patients to level II or III facilities. Level II will evacuate patients to level III facilities, and Level III will evacuate patients out of theater.

Aid Station Locations
Level I: Co-located with Tier 4 Bases
Level I augmented with Civilian Doctors & Nurses
Level II: Co-located with Tier 2 & 3 Bases
Level III: Co-located with Tier 1 Bases

Acronyms
ASMC: Area Support Medical Company
CSH: Combat Support Hospital
FST: Field Surgical Team
Proposed DMAT Locations

Disaster Medical Assistance Teams are established at Tier 1, 2 & 3 Airports and can support up to 250 patients per day.

<table>
<thead>
<tr>
<th>Tier</th>
<th>Airport Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 2</td>
<td>KBLI: Bellingham</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KPAE: Everett</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KSEA: SEATAC</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KPWT: Bremerton</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KRNT: Renton</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KGRF: JBLM</td>
</tr>
<tr>
<td>Tier 3: IFR</td>
<td>KOLM: Olympia</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KSHN: Shelton</td>
</tr>
<tr>
<td>None</td>
<td>I-5 (Near Vancouver)</td>
</tr>
</tbody>
</table>

DMAT Placement by Phase / Priority

<table>
<thead>
<tr>
<th>1st Wave Priorities</th>
<th>2nd Wave Priorities</th>
<th>3rd Wave Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelton</td>
<td>Vancouver</td>
<td>Bellingham</td>
</tr>
<tr>
<td>Seattle</td>
<td>Renton</td>
<td>Shelton (Additional DMAT)</td>
</tr>
<tr>
<td>JBLM</td>
<td>Olympia</td>
<td>Seattle (Additional DMAT)</td>
</tr>
<tr>
<td>Everett</td>
<td>Bremerton</td>
<td>Renton (Additional DMAT)</td>
</tr>
</tbody>
</table>
Disaster Air Staging Facilities (DASF) are USTRANSCOM assets which provide medical triage, patient holding and movement. The following are proposed locations for DASFs:

<table>
<thead>
<tr>
<th>Tier</th>
<th>Airport Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier 1</td>
<td>KSEA: Seattle</td>
</tr>
<tr>
<td>Tier 1</td>
<td>KTCM: Tacoma</td>
</tr>
<tr>
<td>Tier 1</td>
<td>KPAE: Everett</td>
</tr>
<tr>
<td>Tier 2</td>
<td>KOLM: Olympia</td>
</tr>
</tbody>
</table>

**DASF Placement by Priority**

1st Wave Priorities

<table>
<thead>
<tr>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seattle</td>
</tr>
<tr>
<td>Olympia</td>
</tr>
<tr>
<td>Everett</td>
</tr>
<tr>
<td>Tacoma (McChord)</td>
</tr>
<tr>
<td>Seattle</td>
</tr>
</tbody>
</table>
Mortuary Affairs Concept

Mission
Mortuary Affairs (Quartermaster Company) conducts any one of the following tasks:

- Mortuary Affairs Collection Point Operations
- Mortuary Affairs Decontamination Point Operations
- Theater Evacuation Point
- Personal Effects Depot

Details
With civilian augmentation, mortuary affairs can set up and operate an in-theater mortuary.

One Company can process up to 80 remains per day and is composed of 155 personnel.
Water Purification Concept

LWPS & ROWPU Placement by Phase / Priority

- **1st Wave Priorities**
  - Regions 3 (Coastal Communities)
  - Region 2 (Coastal Communities)
  - Region 6 (Seattle)
  - Region 5 (Tacoma)

- **2nd Wave Priorities**
  - Region 1 (Everett)
  - Region 4 (Vancouver)
  - Region 6 (Bellevue, Kirkland)
  - Region 5 (Pierce County)

- **3rd Wave Priorities**
  - Region 1 (Bellingham)
  - Region 3 (Bremerton)
  - Region 6 (Renton)
  - Region 6 (King County)

- **4th Wave Priorities**
  - Region 5 (Pierce County)
  - Region 6 (King County)
  - Region 4 & 6

---

1 Quartermaster Company (Water Purification and Distribution) has 3 LWPS and 3 ROWPU. 1 ROWPU produces 60,000 GPD and 1 LWPS produces 3,000 GPD. Therefore, each Quartermaster Company produces 189,000 GPD.

Priority of military water purification (production) assets will be in urban areas due to a lack of fresh water resources, while rural areas near fresh water sources receive individual filtration devices to augment water production services. Distribution of purified water will be rudimentary initially, as bottling capacity arrives later in TPFDD.
Military Security Assets

Military Security assets are provided as “Manpower” to the response and are capable of performing a large variety of tasks. They may be employed as part of the distribution network, conducting health and wellness checks, or providing stationary or mobile security. When possible these assets will be provided under T32.
Engineering Concept

Military Engineering Assets

Engineering assets are allocated to each HLS region based on forecast needs (Bridging, Vertical / Horizontal Construction, Mobility Augmentation Company). HLS Region 3 is the initial priority for Engineering capability. Due to the later arrival via TPFFD, engineering priorities may be reassessed prior to arrival.
Fuel Distribution Concept

East of the Cascades

DLA Fuel Farm at Manchester
- 25 Million gallons of Diesel
- 50 Million Gallons of Jet Fuel

This fuel is used early in PH2A/B to sustain the response as infrastructure is emplaced that will enable long term sustainment. Distribution is via fuel barge on waterways, and heavy lift helicopter and fuel bladders to response critical need.

40K gallon fuel farm (minimum) established via above ground fuel bladders (2x 20K bladders minimum), fueled from fixed wing download.

20K Gallon fuel farm (minimum) established via above ground fuel bladders (1x 20K bladders minimum), fueled from fixed wing download.

20K Gallon fuel farm (minimum) established via above ground fuel bladders (1x 20K bladders minimum), fueled from fixed wing download.

10K Gallon Fuel farm, based on need, established via above ground fuel bladders, fueled by rotary wing or over-the-ground when available.

**NOTE:** There is virtually no DOD capacity for storage, transfer, or distribution of bulk MOGAS or LPG.
Military Trans/Distribution Assets

Transportation/Distribution assets are allocated to each HLS region based on population and geographic breadth. Due to the later arrival via TPFFD, transportation/distribution priorities may be reassessed prior to arrival.
Region 2
Federal ESF Assets
US&R
DMAT

Region 1
Federal ESF Assets
US&R
DMAT

East
Federal ESF Assets

Region 3
Federal ESF Assets
US&R
DMAT

Eastern WA
1,487,147

Region 4
Federal ESF Assets
US&R

Non-DOD Personnel Requirement
Region 1: 513
Region 2: 292
Region 3: 442
Region 4: 300
Region 5: 363
Region 6: 734
East: 0
Total: 2,644

Region 6
Federal ESF Assets
US&R
DMAT

Region 5
Federal ESF Assets
US&R
DMAT

As Of: 03OCT14
FY 15 Exercise Discussion
(Evergreen Tremor)

WMD Rehearsal
Key Objectives Confirmation
Extent of Play Backbriefs
Exercise Design Backbrief
FY 16 Exercise Discussion
(Cascadia Rising)

Ardent Sentry 16
Vigilant Guard 16
Ultimate Caduces 16
JLOTS 16
Turbo Challenge 16
Cyber Guard 16
Questions / Discussion

Be prepared for anything.

Thank you for your time!